

### REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1-17 are now present in this application. Claims 1, 11 and 13 are independent. Claims 13-17 have been added.

Amendments have been made to the specification, and claims 1, 8 and 11 have been amended. Reconsideration of this application, as amended, is respectfully requested.

### Priority Under 35 U.S.C. § 119

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

### Drawings

Applicant has not received a Notice of Draftsperson's Patent Drawing Review PTO-948 indicating whether or not the formal drawings have been approved by the Draftsperson. Clarification in the next Office Action is respectfully requested.

Specification Amendments

Applicants have amended the specification in order to correct minor typographical errors, and to place the specification in better form.

Rejection Under 35 U.S.C. § 102

Claims 1-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,831,591 to Suh. This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

Suh discloses a double window television having a screen ratio of 16 to 9, wherein said screen can be divided vertically into two halves. Each partitioned screen displays a picture having a screen ratio of 4 to 3, which is the screen ratio of existing TV systems. Thus, picture signals having the same screen ratio for two different TV signals can be displayed on a single screen (see Suh, Col. 1, lines 13-22). In other words, two different television programs can be viewed at the same time on a single split screen, as long as the screen ratio is the standard ratio of existing TV systems.

According to Suh, the split screen can also be used to display information data from a value added network (VAN). In such a case, an intelligence TV selects either an information RGB signal, or a TV RGB signal for display on the

screen (see Suh, Col.1, lines 23-35). A problem exists, however, in that both signals cannot be displayed on the same screen at the same time (see Suh, Col. 1, lines 43-45). Suh is directed to solving this problem.

Figures 1 and 4 discloses a double window processing unit 100, which receives a main video signal (TV1) and a sub video signal (TV2), which can be displayed on a single split screen at the same time. Sub video signal TV2, however is input to a switching unit 300, which also receives input from information processing unit 210. Switching unit 300 is capable of selecting between the TV2 television signal or the information from unit 210 for display on one half of the split screen. The information from unit 210 may include various kinds of communications services transmitted via a VAN, such as stock market quotes, news, weather or TV information (see Suh, Col.1, lines 36-39). The selection between a TV2 signal or an information signal is controlled by the user (see "KEY INPUT", Figs. 1 and 4).

In the arrangement discussed above, a user is limited to selecting which signal is displayed, that is, a user can choose between viewing either the TV2 signal or the information signal. After the user makes this selection, the KEY INPUT provides no further function such as menu control over program specific information or broadcasting program information. Capability provided by the Key Input is basically no more than simple channel selection. Suh does not provide the user with control over icons or menu displays. That is, although it may

described as within the realm of possibility that a menu may be displayed on the screen (possibly as information), a user has no ability to select the displayed information using the Key Input. The Key Input is not a menu key at all, but rather, it is a channel selection key.

Therefore, Suh does not disclose determining whether or not a menu key is input to display program specific information including broadcasting program information, as recited in independent claim 1 (as amended) or setting one of the plurality of screens as a menu display screen for displaying user selected program specific information from said menu, including broadcasting program information, as recited in independent claim 11 (as amended). Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

With regard to dependent claims 2-10 and 12, Applicants submit that claims 2-10 and 12 depend, either directly or indirectly, from independent claims 1 and 11, which are allowable for the reasons set forth above, and therefore claims 2-10 and 12 are allowable based on their dependence from claims 1 and 11. Reconsideration and allowance thereof are respectfully requested.

### Added Claims

Claims 13-17 have been added for the Examiner's consideration.

Independent claim 13 recites a combination of elements in a method of

displaying a menu in a TV screen including adjusting sizes of one or more icons of said menu so as to be distinguishably recognized by said user when displayed on said menu-display screen. Applicants respectfully submit that this combination of elements as set forth in independent claim 13 is not disclosed or made obvious by the prior art of record.

Applicants submit that claims 14-17 depend, either directly or indirectly, from independent claim 13, and are therefore allowable based on their dependence from claim 13, which is believed to be allowable.

Consideration and allowance of claims 13-17 are respectfully requested.

### Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Percy L. Square, Registration No. 51,084, at (703) 205-8034, in the Washington, D.C. area.

Application No.: 09/475,135  
Art Unit 2614

Attorney Docket No. 0465-0647P  
Amendment filed on May 10, 2002  
Page 19

Prompt and favorable consideration of this Amendment is respectfully requested.

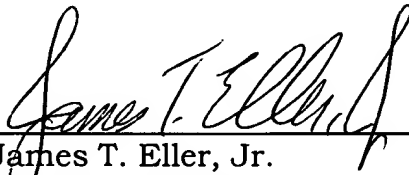
Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**In the Specification:**

The paragraph beginning on page 1, line 9, has been amended as follows:

--Generally, a digital TV receiver, as shown in Fig. 1, includes: a tuner 10 [to] which receives a broadcasting signal [is received]; an A/D converter 11 for converting the broadcasting signal received from the tuner 10 into [a] digital broadcasting data; a channel decoder 12 for detecting a pilot signal from the digital broadcasting data to detect a baseband signal and for performing an error correction for the detected signal; a microcomputer 20 for outputting a control signal in accordance with manipulation of a user; a TP analyzer 13 for analyzing a TP signal in the digital broadcasting signal output from the A/D converter 11 to detect audio/video signals under the control of the microcomputer 20; an MPEG audio decoder 24 for decoding the audio signal analyzed in the TP analyzer 13; an MPEG video decoder 25 for decoding the video signal analyzed in the TP analyzer 13; a digital to analog converter\_(DAC) 30 for converting the digital audio signal decoded by the MPEG audio decoder 24 into an analog signal; a flash ROM\_(read only memory) 40 where channels and programs are stored; a RAM 41 where [a] temporary data is stored by the operation of the microcomputer 20; and an NTSC encoder 31 for converting the video signal decoded by the MPEG video decoder 25 into an image signal which is displayed on a TV or monitor. Further, an SDRAM 23 is necessary for data processing in the MPEG audio decoder 24 and the MPEG video decoder 25, and a user interface 21 and a CAS interface 22 are necessary for generating an external operation signal for the microcomputer 20.--

The paragraph beginning on page 2, line 10, with the following rewritten paragraph:

--Generally, the digital broadcasting processes the video signal and the audio signal under the MPEG standard. Particularly, the MPEG standard number for the broadcasting system is ISO/IEC 13818-1, the standard [that] for the video signal is ISO/IEC 13818-2, and the standard [that] for the audio signal is ISO/IEC 13818-3. However, the digital TV receiver in the U.S.A. does not use the audio signal under the MPEG system, and processes it under the standard of DOLBY AC-3.--

The paragraph beginning on page 2, line 25, has been amended as follows:

--The channel decoder 12 detects the pilot signal in the intermediate frequency signal to detect the baseband signal and converts the baseband signal into a digital signal. Next, it performs a timing recovery [appropriate] corresponding to [a] symbol rate and then performs the error correction. The output signal of the channel decoder 12 is a transport stream packet type signal sequence in a byte unit.--

The paragraph beginning on page 3, line 7, has been amended as follows:

--The transport signal sequence, which is standardized in the MPEG-2 system, is a time-multiplexed signal sequence, which is called "transport stream packet". The transport signal sequence contains a header on which a packet identifier\_(PID) number is recorded, on the starting of the packet. The PID number is utilized as the information with which the time-multiplexed signal is demultiplexed. Also, the PID number indicates the type of [a] current packet, and if the PID number is analyzed, it is detected whether the current packet is a video packet, an audio packet, or program specific information.



Particularly, the digital TV standard in the U.S.A. includes [the] program specific information, that is, [a] program and system information protocol (hereinafter, referred to as 'PSIP').--

The paragraph beginning on page 3, line 20, has been amended as follows:

--The PSIP includes a master guide table\_(MGT) where the versions of all the broadcasting program tables are controlled, a terrestrial virtual channel table\_(TVCT) where the information for channels is stored, a rating region table (RRT) where a rating table of each program is listed, an event information table (EIT) for providing the information on the current broadcasting programs and future broadcasting programs, an extended text table\_(ETT) for providing [the] detailed information on the current broadcasting programs and future broadcasting programs, and a system time table\_(STT) for sending [a] current time.--

The paragraph beginning on page 4, line 5, has been amended as follows:

--The video and audio standards in the MPEG-2 system are in connection with the signal sequences of the compressed video and audio. Under the MPEG-2 standard, the video signal, the audio signal and the program specific information are all time-multiplexed and transmitted in several transport stream packets. [And, the] The signal sequences thereof are all discriminated with the PID number.--

The paragraph beginning on page 4, line 24, has been amended as follows:

--The MPEG video decoder 25 decodes the video signal sequence applied from the TP analyzer 13 and outputs the decoded result to the NTSC encoder

31. The video signal sequence applied from the TP analyzer 13 is the compressed data in the MPEG-2 system. Therefore, the MPEG video decoder 25 [uncompresses] decompresses the video signal sequence to [return] restore it to [an] original digital video data.--

The paragraph beginning on page 5, line 5, has been amended as follows:

--The MPEG audio decoder 24 decodes the audio signal sequence applied from the TP analyzer 13 and outputs the decoded result to the DAC 30. The audio signal sequence applied from the TP analyzer 13 is the compressed data in the MPEG-1 system. Therefore, the MPEG audio decoder 24 [uncompresses] decompresses the audio signal sequence to [return] restore it to [an] original digital audio data.--

The paragraph beginning on page 6, line 10, has been amended as follows:

--Fig. 2 shows an electronic program guide (EPG) of the program specific information of the GUI type. Referring to Fig. 2, a menu screen 50 includes icons 51 and characters 52 explaining the icons. Most [of] programmers who produce [the] an EPG, produce a menu based on a full screen as shown in Fig. 2.--

The paragraph beginning on page 6, line 17, has been amended as follows:

--Referring to Fig. 3, in [In] the EPG displayed in the related art digital TV, when the viewer selects a double window mode for simultaneously displaying a broadcasting program screen 60 and an EPG screen 50', a width of the EPG program screen 50' becomes smaller. As a result, widths of the characters and icons become smaller, thereby causing the viewer difficulty in

discriminating [to be difficult to discriminate] the characters 52' and icons 51'.--

The paragraph beginning on page 6, line 24, has been amended as follows:

--Furthermore, if the icons are displayed with a menu window 50'' of a picture in picture (PIP) mode as shown in Fig. 4, characters 52'' and icons 51'' have smaller widths and lengths, thereby making it difficult for the viewer to discriminate meanings of the characters and icons. Particularly, it is difficult to discriminate meanings of the characters seriously scaled down in their size while meaning of the icons may be discriminated by the viewer to some extent regardless of the double window mode and the PIP mode.--

The paragraph beginning on page 10, line 18, has been amended as follows:

--If the user selects a screen mode of the TV as a double window mode in step S110, the display area of the TV is divided into a first screen and a second screen having [the] almost the same size in step S120.--

The paragraph beginning on page 11, line 19, has been amended as follows:

--If discrimination is reduced as the size of the reduced characters is seriously smaller than the default size, it is difficult for the viewer to discriminate the [element] elements of the menu. To avoid this, the size of the reduced characters is again expanded to the size which is to be discriminated by the viewer. The expansion rate of the reduced characters is set at a value less than a reciprocal number of the reduction rate of characters. For example, if the size of the characters has been reduced at a size of 50%\_(1/2) of the

default size, the expansion rate is set at a reciprocal number of 50%, i.e., 2 or less. That is, if it is difficult to discriminate characters as the size of the reduced characters is reduced at the size of 50% of the default size, the size of the reduced characters is again expanded at a size less than double size. After all, in step S500, the characters of the menu are displayed at a size less than the original size, i.e., the default size.--

The paragraph beginning on page 13, line 18, has been amended as follows:

--If discrimination is reduced as the size of the reduced characters is seriously smaller than the default size, it is difficult for the viewer to discriminate the [element] elements of the menu. To avoid this, the size of the reduced characters is again expanded to the size which is to be discriminated by the viewer. The expansion rate of the reduced characters is set at a value less than a reciprocal number of the reduction rate of characters. For example, if the size of the characters has been reduced at a size of 25% (1/4) of the default size, the expansion rate is set at a reciprocal number of 25%, i.e., 4 or less. That is, if it is difficult to discriminate characters as the size of the reduced characters is reduced at the size of 25% of the default size, the size of the reduced characters is again expanded at a size less than quadruple size. After all, characters of the menu are displayed at a size less than the original size, i.e., the default size.--

The paragraph beginning on page 14, line 8, has been amended as follows:

--If the characters of the menu are maintained at the original size at the state that the menu display area is reduced at 25% of the display area of the TV, all of the characters may not be displayed on the menu display area.

Particularly, if the width of the character of the menu is reduced less than  $\left[\square\right]$  50% (1/2) of the original width thereof, respective elements of the menu may overlap each other. In that case, in the present invention, all of the characters of the selected element are not displayed, but some menu is displayed with maintaining the size of the character at a size to be discriminated by the viewer. Also, in step S500 of the present invention, a menu of a new size is displayed by manipulating a key of the TV so that each element of the menu is scrolled on the menu display area.--

The paragraph beginning on page 15, line 22, has been amended as follows:

--If the characters of the menu are maintained at the original size at the state that the menu display area is reduced at 25% of the display area of the TV, all the characters may not be displayed on the menu display area. Particularly, if the width of the character of the menu is reduced less than  $\left[\square\right]$  50% (1/2) of the original width thereof, respective elements of the menu may overlap each other. In that case, in the present invention, all the characters of the selected element are not displayed, but some menu is displayed with maintaining the size of the character at a size to be discriminated by the viewer. Also, in step S500, a menu of a new size as shown in Fig. 7 is displayed by manipulating a key of the TV so that each element of the menu is scrolled in the menu display area.--

In the Claims:

The claims have been amended as follows:

1. (Amended) A method for displaying a menu of a TV comprising the

steps of:

determining whether or not a menu key is input to display program specific information including broadcasting program information;

determining a current screen display mode if [the] said menu key is input; and

displaying a menu element including an icon in a menu display area depending on the screen display mode.

8. (Amended) The method of displaying a menu of a TV as claimed in claim 7, wherein the step of adjusting the size of the menu element includes the steps of obtaining [area] a first ratio between a region on which the menu is to be displayed and a region in which the menu is occupied, and reducing the size of the menu at a predetermined ratio if [the rate] said first ratio is less than 100%.

11. (Amended) A method for displaying a menu of a TV in which a screen display area is divided to display a plurality of screens as a user selects a screen display mode, the method for displaying a menu of a TV comprising the steps of:

setting one of the plurality of screens as a menu display screen for displaying user selected program specific information from said menu, including broadcasting program information; and

displaying a menu element showing said program specific information, including broadcasting program information on the menu display screen.

Claims 13-17 have been added.